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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,997	07/25/2003	Hsueh Sung Tung	H0005304	3726

7590

05/19/2005

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EXAMINER

NYALLEY, LANSANA

ART UNIT PAPER NUMBER

1621

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/626,997	TUNG ET AL.	
	Examiner	Art Unit	
	Lansana Nyalley	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-9,11-17,19-31 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 2,4,10,18 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

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Claims 1-37 are pending.

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 5-9, 11-17, 19-20, 22-31 and 33-37 are rejected under 35 U.S.C.

103(a) as being unpatented over Elsheikh et. al. (E1), (US patent 5,895,825) in combination with Elsheikh et. al. (E2), (US patent 6,124,510).

**WHAT APPLICANT CLAIMS.**

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Applicants process for the manufacture of 1,3,3,3-tetrafluoropropene comprising:

- (a) reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and under conditions sufficient to form an intermediate product which comprises 1-chloro-1,3,3,3-tetrafluoropropane and/or 1,1,1,3,3-pentafluoropropane: and
- (b) reacting said intermediate product with a caustic solution and under conditions sufficient to dehydrochlorinate 1-chloro-1,3,3,3-tetrafluoropropane and/or to dehydrofluorinate 1,1,1,3,3-pentafluoropropane, forming a reaction product which comprises 1,3,3,3-tetrafluoropropene.

**DETERMINATION OF THE SCOPE AND THE CONTENT OF THE  
PRIOR ART (M.P.E.P. 2141.01).**

Elsheikh et. al. (E1), (US patent 5,895,825), teach a process of manufacturing 1,1,1,3,3-pentafluoropropane (the intermediate of the instant claims) by reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor under conditions sufficient to produce 1,1,1,3,3-pentafluoropropane (see column 1, lines 23-41).

Elsheikh et. al. (E2), (US patent 6,124,510) teach a process for preparing the cis and trans isomers of 1,3,3,3-pentafluoropropene from the intermediate of the instant claims by dehydrofluorination of 1,1,1,3,3-pentafluoropropane in a caustic solution.

**ASCERTAINMENT OF THE DIFFERENCE BETWEEN THE PRIOR  
ART  
AND THE CLAIMS (M.P.E.P. 2141.02).**

The difference between Elsheikh et. al. and the claims of the instant application is that Applicants claim a two step process whereas the prior (E1 and E2) teach a single step process for preparing the intermediate, 1,1,1,3,3-pentafluoropropane, and a single step process for preparing the final product, 1,3,3,3-tetrafluoropropene from the said intermediate.

**FINDING OF PRIMA FACIE OBVIOUSNESS-RATIONAL AND  
MOTIVATION (M.P.E.P. 2142-2143).**

The combination of two steps well known in the art would be obvious to one of ordinary skill since there is no indication of an interaction between process steps of such a type that would lead one of ordinary skill in the art to doubt that a substitution of alternative steps known in the art could be made. In re Farkas, 152, USPQ,109, (1966).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of (E1) and (E2) because both (E1) and (E2) teach the elements of the claims of the instant application. One of ordinary skill in the art would have been motivated to combine the teachings of (E1) and (E2) in order to produce a compound that is used as a monomer in homopolymerization and copolymerization..

Based on the above, both (E1) and (E2) teach the elements of the claims in the instant application with sufficient guidance, particularity and reasonable expectation of success that the claims in the instant application would be prima facie obvious to one of ordinary skill ( Elsheikh et. al. teach or suggest all the claim limitations with a reasonable expectation of success M.P.E.P 21434.).

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**Allowable Subject Matter.**

Claims 2, 4, 10, 18 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2, 4, 10, 18 and 32 are allowable over Elsheikh et. al. because Elsheikh et. al. do not teach a process wherein the product comprises 1-chloro-1,3,3,3-propane or a mixture comprising 1,1,1,3,3-pentafluoropropane and 1-chloro-1,3,3,3-tetrafluoropropane. Additionally, they do not teach a process for the separation of a mixture comprising 1,1,1,3,3-pentafluoropropane and 1-chloro-1,3,3,3-tetrafluoropentane .

Accordingly, the Examiner finds claims 2,4,10,18 and 32 allowable

**CONCLUSION.**

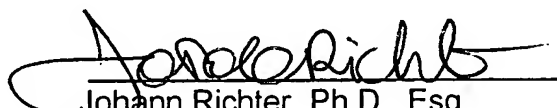
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lansana Nyalley whose telephone number is 571,272,0697. The examiner can normally be reached on 7:45 to 4:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571 272 0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lansana Nyalley, Ph.D.  
05-12-05



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